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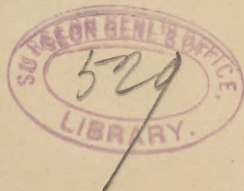
A REPORT OF FOUR SURGICAL CASES.¹

1. *Excision of the Superior Maxillary Nerve.* 2. *Intracranial Neurectomy of the Fifth Nerve.* 3. *Cholecystectomy.* 4. *Esophagotomy.*

BY R. W. STEWART, M.D., M.R.C.S.,
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CASE I. *Excision of the superior maxillary nerve at the foramen rotundum.*—H. S., aged seventy-eight years, for the past fourteen years has been a sufferer from facial neuralgia. The pain was first felt for a brief period on the right side of the face, and then migrated to the left side. During the first few years there were considerable intervals of freedom from pain, but of late years the intermissions have been less frequent and of shorter duration than formerly. The pain was paroxysmal in character, and could be produced by the slightest irritation, such as eating, drinking, or friction of the painful area, which is the region that derives its sensibility from the second branch of the fifth nerve. The most painful points are at the infra-orbital foramen, the border of the upper lip, and the alveolar margin of the upper jaw. The teeth had been extracted and therapeutic resources exhausted before his attending physician, Dr. Koenig, referred him to me for operation.

¹ Read before the Pittsburg Academy of Medicine, June 18, 1894.



The operation was performed on January 16th, at the Mercy Hospital, by Carnochan's method, slightly modified, as follows: A T-shaped incision, extending to the bone, was made, the transverse portion being one-and-a-half inches in length, and lying directly over the lower border of the bony framework of the orbit. The vertical incision, of equal length, passed over the infraorbital foramen. The nerve was isolated at its point of emergence from the foramen and its peripheral branches, by a steady, but forcible, traction, were torn loose, an effort being made to remove as much of the terminal branches as possible. As the terminal branches of the fifth and seventh nerves in this situation are intimately associated, a partial paralysis of the orbicular muscles may follow this procedure. The next step was to break down the bony margin of the infraorbital foramen. This may be done with a trephine, but a large gouge-chisel is preferable. The nerve was then followed into the antrum, where it usually disappears in a groove on the floor of the orbit, which should be broken down, and the nerve isolated and traced to the posterior wall of the antrum, which in turn should be broken down in the same manner as had been the anterior wall of the antrum. The sphenomaxillary fossa was then entered, and the nerve traced backward until further progress was arrested by the anterior surface of the sphenoid. A suitable pair of forceps was gently insinuated alongside of the nerve, and the latter was firmly grasped as it emerged from the sphenoid at the foramen rotundum, and torn from its deeper connections. Hemorrhage, while troublesome, because it effectually obscured the deeper portion of the wound, was easily controlled by packing the cavity for a few minutes with iodoform-gauze. Experience has shown that drainage is unnecessary. In a case which I reported (MEDICAL

NEWS, August 11, 1894) I retained the packing in the cavity for two days before suturing the wound, but in the present case primary suture was adopted. No constitutional disturbance followed the operation. The temperature never exceeded the normal. The wound united by first intention. The sutures were removed on the second day, and the patient was discharged from the hospital on the fifth day. From the time of the operation there was immediate relief from the neuralgia.

Excision of the superior maxillary nerve at the foramen rotundum destroys the sensory function of Meckel's ganglion, and renders anesthetic the integument above and over the malar bone and that of the lower eyelid, the side of the nose and the upper lip; the upper teeth; the lining membrane of the nose; the membrane of the upper part of the pharynx, of the antrum of Highmore, and of the posterior ethmoidal cells; the soft palate, tonsil and uvula, and the glandular and mucous structures of the roof of the mouth. (Quain.)

In spite of the extensive destruction of the nerve in this operation the channel of communication between the peripheral and central portions of the nerve is usually re-established in a period varying from one to five years, and in these cases a return of the neuralgia may be expected. In the case already referred to the neuralgia returned two years after the operation, necessitating an intracranial neurectomy, with removal of the Gasserian ganglion.

CASE. II. *Intracranial neurectomy of the branches of the fifth nerve, with destruction of the Gasserian ganglion.*—Alice C., aged forty-four years, un-

married, was referred to me by Dr. J. E. T. Martin. She had never had any serious illness, with the exception of an attack of influenza four years ago, which left her a legacy of *tic douloureux*. At first the pain, which was always on the right side of the face, was intermittent in character, lasting two or three weeks, with a similar interval of freedom from pain; but for the preceding year the pain had persisted without intermission. It was paroxysmal in character, coming on with the slightest irritation, so that eating, drinking, talking, a blast of cold air, or the slightest touch on the surface of the face, was followed by excruciating pain. It was felt most acutely at a point immediately in front of the right ear, but it was not limited to any single branch of the fifth nerve, and could be elicited at almost any point in its distribution.

The teeth had been extracted, but no benefit followed. Medicinal treatment had proved useless, and latterly opium had been resorted to with but transitory and incomplete relief. The patient was broken in health and spirit, and was profoundly melancholy.

In considering the operative treatment, it appeared evidently useless to operate on a single branch of the nerve, as the condition was not a local but a general affection of the whole nerve. I, therefore, determined to perform an intracranial neurectomy after the Hartley method, which was carried out in the Southside Hospital, December 14, 1894. An omega-shaped flap, including the bone and soft tissues, was raised from the temporal region. The base of the flap extended from the exterior angular process to a point immediately in front of the ear. In raising the flap the soft tissues were not detached from the bone, in which a groove was cut in the line of the incision with a woodcarver's chisel. The groove penetrated to the *diploë*, but at the upper

portion it penetrated through the vitreous plate, where an elevator was inserted, and the bony plate, with its superincumbent tissues, was raised from its bed and turned downward, a fracture taking place at the base.

In order to reach the floor of the middle fossa of the skull it was necessary to bite away a portion of the projecting bone at the point of fracture, and to puncture the dura to permit of the escape of the cerebro-spinal fluid. By this means ample room was gained for subdural manipulation. In raising the dura from the fossa of the skull the anterior branch of the middle meningeal artery was ruptured at two places; the hemorrhage was controlled by ligating the proximal and distal portions of the artery.

In the search for the second and third branches of the nerve the proximity of the latter was detected before it was exposed to view by the motor effects on the muscles of mastication produced by transmitted pressure on the third branch of the nerve.

The second and third branches were exposed at their entrance into the foramen rotundum and foramen ovale respectively, where they were seized with forceps and divided. The hemorrhage at this time was most obstinate, and obscured the field of operation so that it was impossible to obtain a view of the dura sufficiently long to expose safely the ganglion. However, the proximal ends of the nerves, to which forceps were still attached, were torn out, and a dental excavator was inserted along the course of the third branch until its extremity was felt to be within the canal of the dura mater, which encloses the Gasserian ganglion; the latter was broken up as thoroughly as was possible under the circumstances. The subdural cavity, which comprised the field of operation, was temporarily packed with iodo-

form-gauze in order to control the hemorrhage, after which the osteoplastic flap was replaced and sutured, no provision being made for drainage.

The subsequent history of the case was uneventful and most satisfactory. There was but little shock, and immediate relief from the neuralgia. There was primary union of the wound and an almost afebrile convalescence. The woman's melancholy was replaced by cheerfulness and loquacity. At the end of the second week she was discharged from the hospital. Six weeks after the operation I re-examined the patient at my office. There had been no recurrence of pain. There was almost total anesthesia of the area supplied by the fifth nerve. The sensibility of the eye was not abolished, but was perceptibly less than that of its fellow. The only discomfort the patient complained of was the inability during eating to prevent the food from accumulating in the buccal cavity on the paralyzed side.

I reported (MEDICAL NEWS, August 11, 1894) an operation of this kind which at that time was the forty-first on record. It was performed after the method devised by Rose, a description of which is contained in the article referred to, as well as in the original article by Rose in the *British Medical Journal*, 1892, 1, 261. A comparison of the methods of performing this operation, as devised by Rose and Hartley, in the light of my limited experience with both operations, more than justifies the preference I gave to the latter method in my article on the subject already referred to.

In my cases Hartley's method proved not only easier of execution, but was less disfiguring, and interfered less with the functions of the lower jaw,

there being less displacement of the jaw and an absolute freedom from risk of injuring either the seventh nerve or the parotid gland or its duct. It is true that I succeeded by Rose's method in removing the Gasserian ganglion *in toto*, but that was something that had never been previously accomplished by this method, and was an unexpected occurrence.

A careful review of the literature of the subject, together with some experiments on the cadaver, leaves me in doubt as to the value of Horsley's method of excising the root of the nerve as compared with that of Hartley and Rose, of attacking the ganglion or the branches. The solitary trial of the former method, with its unfortunate result, is not a fair criterion upon which to base comparative results.

CASE III. *Cholecystectomy for empyema of the gall-bladder, with extra-peritoneal fixation of the pedicle.*—Mrs. E. C., aged fifty-eight years, was the mother of ten children, eight living and two dead. She had a tumor growing in the right hypochondriac space, for which she consulted her family physician, Dr. C. Gillespie, of Freeport, by whom she was referred to Dr. Emmerling, who in turn referred her to me for operation. The patient was an active, well-preserved woman, who had never had a serious illness, with the exception of pleuro pneumonia.

About eight years ago she noticed in the right hypochondriac space a small tumor, which slowly but constantly increased in size until at the time of the operation it was about the size of the two fists. It was freely movable for a distance of about four inches, and could be pressed upward and backward, underneath the liver to the region of the right kidney.

The tumor was painless on manipulation and had never been painful at any time since it was detected. Subsequent to the operation there was elicited a history of a single but severe paroxysm of pain which preceded by a few months the appearance of the tumor. With the exception of this paroxysm of pain, which was evidently an attack of hepatic colic, there was nothing to indicate that we had to deal with a gall-bladder distended with pus and a gall-stone impacted in the cystic duct.

There was an absence of jaundice, fever or chills.

On December 6, 1894, at the Mercy Hospital, I performed a celiotomy for the purpose of removing the tumor, which was cystic in character and had a pedicle one-and-a-half inches in length which extended to the lower border of the liver, the latter being in turn unduly elongated.

In the attempt to strip the peritoneal covering from the cyst the latter was ruptured near its attachment to the pedicle, and a gush of pus took place into the peritoneal cavity. A free incision was immediately made into the projecting portion of the tumor, permitting the escape of its contents, in which were noticed two small gall-stones; this established the diagnosis of empyema of the gall-bladder.

A gall-stone about half an inch in diameter was so tightly impacted in the cystic duct that its displacement was impossible, nor could it be crushed without the use of an undue amount of violence. A stout silk ligature was therefore thrown around the pedicle at a point beyond the impacted calculus, and the gall-bladder excised, the pedicle being fixed in the abdominal wound. When this was accomplished it was found impossible to replace within the abdomen the elongated border of the liver which protruded at the upper angle of the wound for about three-quarters of an inch, but subsequently atro-

phied, its surface being converted into granulation-tissue, which cicatrized in the ordinary manner.

Two weeks from the date of the operation the pedicle sloughed, and with it came the impacted calculus, and on January 20th the patient left the hospital for her home, the cicatrization of the stump of the pedicle being at that time almost complete.

Cholecystectomy is not by any means a rare operation, but in this case there are some features that are rarely met with, among which may be mentioned : the absence of pain or constitutional symptoms indicative of the presence of pus in the gall-bladder, the great mobility of the latter, and the extra-peritoneal fixation of the pedicle as a means of accomplishing the ultimate removal of an impacted stone in the cystic duct.

CASE IV. *Esophagotomy for stricture of the esophagus*.—Mrs. W., aged thirty-nine years, the mother of five children, always had good health until the present ailment, which she first noticed about six months before the operation ; it was four months later before she experienced serious difficulty in swallowing solid food. The dysphagia steadily increased from this period until there was a total inability to swallow anything but liquids. She was referred by her physician, Dr. Foster, to Dr. Mathist, who in turn referred her to me for operation. At this time the patient swallowed only liquids, and these with considerable difficulty. She was much emaciated as a result of her enforced abstinence.

A bougie could be passed without much difficulty, but the finger inserted down the throat could distinctly feel a firm mass lying behind the larynx and obstructing the orifice of the esophagus. The tumor was fixed to the anterior wall of the esophagus at its

very beginning. The tip of the finger could be readily passed over its projecting border, which felt decidedly rough. The tumor was felt by four physicians besides myself, who were thoroughly competent to examine the case, and there was a consensus of opinion regarding the presence of a tumor and the necessity of operative treatment.

On January 12th, at the Mercy Hospital, I performed external esophagotomy, the incision being carried down on the left side of the neck between the carotid vessels and the trachea, at a point midway between the angle of the jaw and the clavicle. After the esophagus was exposed, but previous to its incision, the trachea was opened and a tube inserted, as it was feared that the hemorrhage resulting from the opening of the esophagus and removal of the tumor might otherwise asphyxiate the patient if the larynx was not tamponed. Before opening the esophagus I passed my finger down the throat in order to define, under anesthesia, the limits and attachments of the tumor, when to my surprise I discovered that the tumor had disappeared. For a moment I was at a loss to account for the new aspect of the case; but I decided to carry my incision into the esophagus for the purpose of ocular inspection. A bougie was therefore inserted and an opening made at the esophago-pharyngeal junction. It was then seen that at the place where the tumor had been felt there were two crescentic folds of mucous membrane which partly occluded the orifice of the esophagus. A longitudinal incision was carried through these folds, and the esophagus was now found to be free. A large rubber tube was inserted through the opening in the neck for the purpose of feeding the patient.

As the hemorrhage was insignificant the tracheotomy-tube was withdrawn and dressings applied, no attempt being made to suture either wound.

Two days after the operation a severe attack of

lobar pneumonia set in and seriously threatened the life of the patient. As the esophageal tube seemed to interfere with the breathing it was removed, and alimentation was carried on by the rectum and by the mouth, much of the latter, however, escaping for the first few days by the cervical wound.

At the end of two weeks the patient was convalescing from the pneumonia. The food no longer escaped from the cervical wound, bougies were passed daily, and the woman was placed on solid food. From this time convalescence was rapid, and at the end of the third week she left the hospital for her home.

This case illustrates the fact that we learn more by recognizing our mistakes than by making none. Here was a well-defined tumor which could be distinctly felt and an approximate estimate made of its dimensions and attachments, yet, in spite of this, the tumor was a phantom and disappeared under anesthesia. The true solution of the matter was that we had to deal with a stricture of the esophagus, which was associated with a tonic spasm of the underlying muscular fibers in such a manner as to give the deceptive sensation to touch and symptoms of a new growth.

I have seen an almost identical condition at the other end of the alimentary tract. In three cases of cicatricial stricture of the rectum, when there was a dense, firm mass obstructing the lumen of the bowel, I have witnessed the almost complete disappearance under anesthesia of the obstructing mass. In one of these cases I carefully observed the phenomena, and was surprised to witness, as the anesthesia deepened, the gradual disappearance of an obstruction that had previously resisted the passage

of a urethral bougie, until the lumen of the bowel was almost completely restored and nothing but a slight cicatricial band was left to mark the site of a tumor so well defined that its malignant nature had been suspected.

It is doubtful whether a recognition of the true condition present in the case of esophagotomy just reported would have modified the treatment, and on that point I have nothing to regret; yet the lesson taught by it is a valuable one, and, together with my experience in stricture of the rectum, has determined me in the future not to hazard a positive diagnosis on the nature of a tumor associated with the muscular wall of the alimentary tract unless the patient is examined under full anesthesia, or the microscopic examination of a specimen removed for that purpose renders this proceeding unnecessary. For invaluable advice and assistance in these cases I am indebted to my colleague, Dr. Buchanan.

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